CHRONIC RHEUMATIC ARTHRITIS

OF

THE SHOULDER-JOINT.

BY

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FROM THE PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

Mr. Adams exhibited a remarkable specimen of this disease, and made the following observations with reference to it.

Partial dislocations of the shoulder-joint from accident are very familiarly spoken of by surgeons, but the reality of the case, as far as I know, has never been demonstrated anatomically. In the year 1836, at the meeting of the British Association at Bristol, I thought I had succeeded in proving that the case, then a solitary one, of the dissection of an alleged partial dislocation of the head of the humerus from accident, published by Sir A. Cooper(*a*), was not really the result of accident, but of the effects of chronic rheumatic arthritis of the shoulder(*b*). Subsequently to this, viz., in the year 1837, Dr. Hargrave(*c*), now one of our Professors of Surgery in the College of Surgeons in this city, published an account of the dissection of a second case of alleged partial luxation from accident of the shoulder-joint, but this specimen I must also, after careful examination, consider to be another example of the result of chronic rheumatic arthritis.

If the previous history of these two cases had been known, I should have been very reluctant to call in question the judgment or opinion of such authorities upon this subject; but as the history of both these cases was altogether unknown, I have felt that any one, after having carefully examined the engravings of these specimens, is at liberty to draw his own conclusions as to them. For my part, my conclusion is, that although partial displacements of the head of

(*a*) Treatise on Fractures and Dislocations, 1823, page 448, plate 21.
(*b*) Athenæum, September, 1836.
(*c*) Edinburgh Medical and Surgical Journal.

the humerus were found to have really existed in these and similar instances, that these displacements were not the result of accident, but the slow effects of disease. There is, however, one case of partial dislocation upwards of the head of the humerus, with displacement inwards of the long tendon of the biceps, published by Mr. Soden, Jun., of Bath, which here calls for *special* consideration, inasmuch as the previous history of it was known. The abstract of this case may be given as follows(*a*):—A man aged 59 was admitted into the Bath United Hospital, November 9, 1839, on account of a compound fracture of the skull, from the effects of which he died in a few hours. His death, we are informed, afforded an opportunity for examining an old injury of the shoulder, and *the symptoms of which had always been involved in great obscurity.* In the month of May, 1839, the deceased was engaged in nailing down a carpet, when, on rising hastily from his occupation, his foot slipped, and he fell backwards on the floor. In order to break the force of the fall he involuntarily placed his arm behind him, and by so doing received the whole weight of the body on the right elbow; the joint, however, though the only part struck, received no injury, for the shock was instantly transmitted to the shoulder, and there the whole effect of the accident was sustained. Acute pain was immediately experienced, and the man supposed he had suffered either a fracture or dislocation, but, feeling that he *could raise the arm over his head*, he felt re-assured, and endeavoured to resume his work; the pain, however, soon compelled him to desist. When Mr. Soden saw the man, on the following morning, the joint was greatly swollen, tender to the touch, and painful on very slight motion. There was *then* no possibility of the man placing his arm over his head, as he said he had done immediately after the accident. Mr. Soden satisfied himself that there was neither fracture nor dislocation of the bones, and, not suspecting a more specific injury than a "severe sprain," he set down the injury as such, &c. When the man stood erect, with his arm dependent, there was observed a slight flattening on the outer and posterior part of the joint, and the head of the bone looked as though it were drawn up higher in the glenoid cavity than it should be. On moving the limb with one hand placed on the shoulder a *crepitating sensation* was experienced under the fingers, simulating a fracture, but in reality caused by the friction of the head of the humerus against the under surface of the acromion. On attempting abduction it was found that the arm could not be raised beyond a very acute angle with the body. The head of the bone was also unduly prominent in front, almost to the amount of a partial dislocation. The patient being of a rheumatic habit, inflammatory action of that character was soon established in the joint, so that the peculiar symptoms of the injury were masked by those of general articular inflammation, which added greatly to the man's suffering, and to the difficulty of diagnosis.

(*a*) See Medico-Chirurgical Transactions, vol. xxvi.

On examining the joint after death the accident was found to be a dislocation of the long head of the biceps from its groove, unaccompanied by any other injury. The tendon was entire, and lay enclosed in its sheath on the lesser tubercle of the humerus; the capsule was but slightly ruptured; the joint exhibited extensive traces of inflammation; the synovial membrane was vascular and coated with lymph; recent adhesions were stretched between different parts of its surface, and ulceration had commenced on the cartilage covering the humerus, where it came in contact with the under surface of the acromion; the capsule was thickened and adherent, and in time probably anchylosis of the joint would have taken place.

Observations on Mr. Soden's Case.—The symptoms the case presented immediately after the accident occurred do not appear to me to be such as we should rationally expect to follow a dislocation inwards of the long tendon of the biceps. For it is stated that the patient could raise his arm over his head immediately after the accident occurred, and we are totally at a loss to account for "the crepitating sensation" experienced under the fingers of the surgeon examining the joint ("simulating a fracture, but in reality caused by the friction of the head of the humerus against the under surface of the acromion"). We could easily imagine such symptoms to have existed if we had been informed that the joint had been previously diseased, and that all those structures normally interposed between the head of the humerus and under surface of the acromion had been absorbed. It is stated, no doubt, that the capsule was slightly ruptured; but this rupture found on dissection, if it really was the immediate result of accident, would not account to us for the fact of crepitation of rubbing surfaces having occurred between the under surface of the acromion and summit of the humerus. On the other hand, the symptoms, including this crepitation, strongly resembled those which ordinarily present themselves in cases of chronic rheumatic arthritis of the shoulder-joint, viz.: the flattening observed on the outer and posterior part of the shoulder-joint; the head of the bone being drawn higher up in the glenoid cavity than it should be; the impossibility of raising the arm from the side, except for a short distance; the statement that "the head of the humerus was also unduly prominent in front, almost to the amount of a partial dislocation:"—all these, it may be observed, are the very *symptoms* which ordinarily present themselves in the usual case of chronic rheumatic arthritis, when it appears in the shoulder-joint.

It is to be remarked that although in this case the man had met with an accident, to which all his symptoms were attributed, it is stated that he was of a rheumatic habit, and that "inflammatory action of that character was soon established in the joint, so that the peculiar symptoms of the injury were masked by those of general articular inflammation, which added greatly to the man's sufferings and to the difficulty of the diagnosis."

The fall on the shoulder, alluded to in the history of the case,

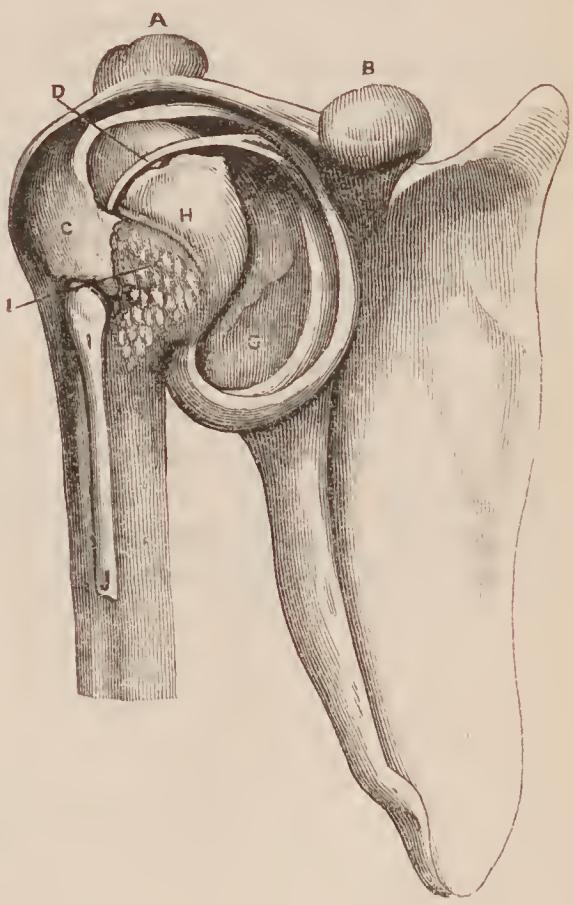
had, in my opinion, only this much to do with the partial displacement upwards of the head of the humerus which succeeded to it,—that this accident became the starting-point of an inflammatory action of a rheumatic character. Now as to the *anatomical appearances* stated to have existed, they seem to me only to differ from the ordinary form of the anatomical characters of chronic rheumatic arthritis present, in this,—that the tendon of the biceps was not absorbed, as it usually is in ninety-nine out of one hundred of these cases, at the period we usually examine them. Mr. Robert W. Smith brought before the notice of the Surgical Society in this city, in the year 1841, a case of chronic rheumatic arthritis of the shoulder-joint, with dislocation of the long tendon of the biceps inwards, and consequent elevation of the head of the humerus, very similar to Mr. Soden's case; the idea of accident, however, being the cause of the partial displacement, did not occur to any of the members of the Society when the cast of the shoulder and the preparation of the joint were presented there(*a*). The singularity of Mr. Smith's specimen consisted in this, that the tendon of the biceps was entire, and that it was dislocated inwards.

These examples I have thought it necessary to allude to, preparatory to the introduction of the following case of chronic rheumatic arthritis of the shoulder-joints. The heads of both humeri were drawn upwards and outwards to the acromion processes. The long tendon of the biceps was dislocated inwards in both shoulder-joints of this individual.

Charles Mailly, aged 48, a farmer's servant, was admitted into the North Union Poorhouse in 1840. He was totally disabled from earning a livelihood in consequence of his having been long afflicted with chronic rheumatism in all his joints. The fingers were distorted and characteristically drawn to the ulnar side of the hand, and all the knuckles presented specimens of nodosity; his wrists were rigid; his elbow-joints, contracted to a right angle, could not be extended; his shoulders were also affected. The covering formed for them by the deltoid muscle seemed to have lost its usual thickness; and the head of the humerus could be observed to be elevated and rendered somewhat prominent in front. Such was the state of his upper extremities that he could not feed himself, and of his lower limbs, that he had been bed-ridden for the last five years. He suffered much in all his joints during changes of the weather; and the usual crackling sound, or articular crepitus, was noticed when the joints were moved. We learned that he had lived very intemperately, and that on one occasion, when completely overcome by drunkenness, that he had lain out all night in the open air, in consequence of which he became affected with a rheumatic fever, which ultimately subsided into the slow fever of chronic rheumatic arthritis in all his joints. He died of diarrhœa, in August, 1848; and the surgeon of the North Union Hospital, Dr. Kirkpatrick,

(*a*) Medical Press, report of the meeting of the Surgical Society.

knowing that I had taken an interest in the case, had the kindness to give me notice of the event, and permitted me to make a *post mortem* examination of the body. I need not in this place relate the result of the dissection, except so far as the shoulder-joints were concerned; I may, however, make one remark, namely, that the pericardium was almost universally adherent to the heart, I have little doubt in consequence of an attack of pericarditis which had supervened during the course of the rheumatic fever above alluded to. Passing over the condition of the other joints, which all showed the well-marked traces of chronic rheumatic arthritis, we proceed to describe the appearance the shoulder-joints presented. When the deltoid muscles were removed, the heads of the ossa humeri were observed to be somewhat enlarged and misshapen. They did not drop down for the space of half or three-quarters of an inch, as they usually do, from the glenoid cavity, when all muscular covering has been removed, but were held upwards and outwards, nearly to the level of the under surface of the acromion(A), and from which surface they were separated merely by the flattened tendon of the supraspinatus and capsular ligament identified with each other. The capsular ligament(C) was closely adherent posteriorly to the head of the bone, and these adhesions maintained it permanently *above* its ordinary level in the glenoid cavity, after all muscular coverings were detached. Superiorly the capsular ligaments seemed degenerated, and the sub-deltoid bursæ to have assumed their functions; anteriorly and towards the axillæ, the ligaments were strong and of a yellowish hue; when they were cut into in front, the tendon of the biceps (D) was seen in both joints to be dislocated internally. The degree of the elevation of the head of the humerus (H) above its ordinary level, in the glenoid cavity, was well seen in the annexed engraving. The anterior part of the head of the bone was altogether divested of cartilaginous covering; it was of a yellowish hue, very hard in its structure, but as yet had presented no sign of ivory deposit. The anterior surface of the head was traversed by a groove in which lay the long tendon of the biceps somewhat more slender than natural. Bunches of vascular fimbriæ (I) existed around the neck of the humerus, as they usually do in cases of chronic rheumatic arthritis. The disease could not be considered



in this case to have advanced nearly so much in the shoulders as it had done in almost all the other joints of this individual. The under surface of the acromion had not as yet been laid bare; both shoulder-joints were symmetrically affected by disease, and in both the tendon of the biceps was similarly dislocated, and the head of the humerus drawn upwards. The glenoid cavity was but little altered in form, but its lower part had been completely abandoned by the head of the humerus. This portion (G) was denuded of all vestige of cartilage, and when the humerus was replaced as it lay during life, slightly rotated inwards, the vascular fimbriæ(I) from the neck of the humerus lay in contact with this lower portion of the glenoid cavity, and were, no doubt, according to Mr. Key's theory, the agents of the absorption of the cartilage. A process of disintegration of the glenoid ligament had commenced. Any one who will take the trouble of comparing either of my specimens of the left or right shoulder-joints with that described by Mr. Soden, will, I imagine, conclude with me that they were all similar, and that they should be classed by pathologists in the same category. In Mr. Soden's case it would appear that the disease (as I would call it) owed its origin to a fall, and might be considered local, although the man was of "a rheumatic habit:" in the case of Mailly chronic rheumatic arthritis existed in all the joints. Upon the whole, although Mr. Soden's case was for a long time to me an enigma which I could not solve, I conjectured that it was to be accounted for only by referring it to the results of chronic rheumatic arthritis induced in the first instance by an accidental fall; yet until I met with the case of Mailly, I was not satisfied that I understood it fully; but now I feel perfectly convinced in my own mind, that this case of Mr. Soden's must hereafter be looked upon as the result of those changes induced by chronic rheumatic arthritis. Upon looking at the preparation preserved in the Museum of the King's College, of Mr. Soden's case, it will be found that the head of the humerus is enlarged and of an abnormal figure. It may also be noticed that the tendon of the biceps is in a commencing state of atrophy, diminished somewhat below the normal size.

THE END.